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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

FILIPCZYK, MARCIN R

ART UNIT	PAPER NUMBER
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2171

DATE MAILED: 03/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/819,265

Applicant(s)

VOIGT, DOUGLAS L.

Examiner

Marc R Filipczyk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment of 12/3/03 and RCE 1/21/04.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

This Action is responsive to Applicant's RCE request filed on January 21, 2004 and amendment submitted on December 3, 2003 (paper # 7 and 10).

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 212 has been entered.

Claims 1-29 remain for examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10, 12, 13, 15, 21 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pothapragada et al. (U.S 6442682) (Pothapragada) in view of Taoda (U.S 5857459).

Regarding claims 1, 15, 21 and 26, Pothapragada disclose: A method, a system and computer program for accessing a data storage device controlled by array controller processes, the method including the steps of:

(c) if the file system access operation request specifies a divertible operation, diverting the divertible operation from file system processes associated with the data storage device to the array controller processes (308, fig. 1 and corresponding text, Pothapragada);

(d) performing the divertible operation with the array controller processes (col. 7, lines 13-30, Pothapragada); and

(e) updating a file system data management arrangement with operation result information from the array controller processes, the file system data management arrangement being controlled by the file system processes (342, fig. 1L and corresponding text, Pothapragada).

However, Pothapragada didn't disclose: receiving a file system access operation request; and determining if the file system access operation request specifies a file system access operation comprising a divertible operation. However, Taoda disclose: receiving a file system access operation request (ST21, fig. 13 and corresponding text, Taoda); and determining if the file system access operation request specifies a file system access operation comprising a divertible operation (ST22, fig. 13 and corresponding text, Taoda). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include receiving and determining if the file system access operation request specifies an operation comprising a divertible operation in the system of Pothapragada as taught by Taoda. The motivation being to enable the user to read and write the large file from the storage devices faster.

In addition, Pothapragada/Taoda disclose: non-divertible operations in a received file system access operation request (312, 314, fig. 1 and corresponding text, Pothapragada); file system program code for performing each non-divertible operation included in a received access operation request and maintaining a file system data management arrangement which includes information for each file in the file system (fig. 4 and corresponding text, Pothapragada); an input/output arrangement connected to the data processing means for passing communications between a file system client and the data processing means (586, 590, 592, 594, 596, fig. 11 and corresponding text, Pothapragada); and an interface between the data processing means and the data storage device (558, fig. 11 and corresponding text, Pothapragada).

Regarding claim 2, all the limitations of this claim have been noted in the rejection of claim 1 above. In addition, Pothapragada/Taoda disclose: wherein the operation comprises a create operation and wherein the operation result information includes a reference to the array storage space to which data for the file specified in the create operation is to be written (col. 6, lines 12-33, Pothapragada).

Regarding claim 3, all the limitations of this claim have been noted in the rejection of claim 2 above. In addition, Pothapragada/Taoda disclose: wherein the step of updating the file system data management arrangement includes causing the file system processes to produce an entry in the file system data management arrangement which includes identifying information for the specified data and a reference to the array storage space to which the specified data is to be written (col. 7, lines 44-64, Pothapragada).

Regarding claim 4, all the limitations of this claim have been noted in the rejection of claim 1 above. In addition, Pothapragada/Taoda disclose: wherein the divertible operation comprises a read operation and further including the step of reading an array storage space reference for the file specified in the read operation (fig. 6 and corresponding text, Pothapragada).

Regarding claim 5, all the limitations of this claim have been noted in the rejection of claim 4 above. In addition, Pothapragada/Taoda disclose: wherein: performing the divertible operation comprises reading data from blocks allocated to the space identified by the array storage system space reference (col. 7, lines 44-64, Pothapragada); and the operation result information includes an indication that the read operation is complete (col. 5, lines 10-31, Pothapragada).

Regarding claim 6, all the limitations of this claim have been noted in the rejection of claim 5 above. In addition, Pothapragada/Taoda disclose: wherein the step of the updating the file system data management arrangement includes causing the file system processes to modify access data in an entry for the file specified in the read operation (fig. 8 and corresponding text, Pothapragada).

Regarding claim 7, all the limitations of this claim have been noted in the rejection of claim 1 above. In addition, Pothapragada/Taoda disclose: wherein the step of the determining if

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the file system access operation request includes a divertible operation is performed with a wedge file system interposed between a file system client and the file system processes associated with the data storage apparatus (col. 7, lines 44-64, Pothapragada).

Regarding claim 8, all the limitations of this claim have been noted in the rejection of claim 7 above. In addition, Pothapragada/Taoda disclose: wherein the step of determining if the file system access operation request includes a divertible operation comprises reading a file attribute for the file specified in the file system access operation request (308, 312, fig. 1 and corresponding text, Pothapragada).

Regarding claim 9, all the limitations of this claim have been noted in the rejection of claim 7 above. In addition, Pothapragada/Taoda disclose: wherein the step of the determining if the file system access operation request includes a divertible operation comprises reading a file size included in the file system access operation request. (310, fig. 1 and corresponding text, Pothapragada).

Regarding claim 10, all the limitations of this claim have been noted in the rejection of claim 1 above. In addition, Pothapragada/Taoda disclose: further including the step of modifying the divertible operation to a form suitable to be performed by the array controller processes (16-21, fig. 3 and corresponding text, Taoda).

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Regarding claim 12, all the limitations of this claim have been noted in the rejection of claim 1 above. In addition, Pothapragada/Taoda disclose: wherein the step of determining if the file system access operation request includes a divertible operation is performed by the file system processes (308, 310, fig. 1 and corresponding text, Pothapragada).

Regarding claim 13, all the limitations of this claim have been noted in the rejection of claim 1 above. In addition, Pothapragada/Taoda disclose: wherein the divertible operation comprises a write or a create operation and the step of performing the divertible operation with the array controller processes includes passing data for a file specified in the divertible operation directly from a file system client to the array controller processes (col. 7, lines 13-30, Pothapragada).

Claims 11, 14, 17, 23, 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pothapragada et al. (U.S. 6442682) (Pothapragada) in view of Taoda (U.S. 5857459) and further in view of Venkatesh et al. (U.S. 5974503) (Venkatesh).

Regarding claims 11, 17 and 23, most of the limitations of these claims have been noted in the rejection of claims 1, 15 and 21 above, respectively. However, Pothapragada/Taoda didn't disclose: wherein the step of modifying the divertible operation comprises converting the operation from a byte offset operation to a block access operation. On the other hand, Venkatesh disclose: wherein the step of modifying the divertible operation comprises converting the operation from a byte offset operation to a block access operation (col. 40, lines 35-45, Venkatesh). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include the step of modifying the divertible operation comprises

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converting the operation from a byte offset operation to a block access operation in the combination system of Pothapragada/ Taoda as taught by Venkatesh. The motivation being to enable the user to apply the encoding techniques to control the block access in the large file from the storage devices.

Regarding claim 14, all the limitations of this claim have been noted in the rejection of claim 1 above. In addition, Pothapragada/Taoda/Venkatesh disclose: wherein the divertible operation comprises a read operation and the step of performing the divertible operation with the array controller processes includes passing data for a file specified in the divertible operation directly from the array controller processes to a file system client (col. 28, lines 55 to col. 29, lines 6, Venkatesh).

Regarding claim 27, all the limitations of this claim have been noted in the rejection of claim 26 above. In addition, Pothapragada/Taoda/Venkatesh disclose: wherein the data processing means comprises: an array controller executing the array controller processes (fig. 10 and corresponding text, Pothapragada); a file system processor executing file system processes and maintaining the file system data management arrangement (col. 27, lines 36-49, Venkatesh).

Regarding claim 28, all the limitations of this claim have been noted in the rejection of claim 26 above. In addition, Pothapragada/Taoda/Venkatesh disclose: wherein the input/output arrangement includes: an input/output port having a physical input/output connection (fig. 11 and corresponding text, Pothapragada); and a network protocol stack component operatively

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connected to the input/output port (74, fig. 5 and corresponding text, Venkatesh). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include a network protocol stack component operatively connected to the input/output port in the combination system of Pothapragada/ Taoda as taught by Venkatesh. The motivation being to enable the user to communicate with the network services using protocol stack to control input/output operations in file system.

Regarding claim 29, all the limitations of this claim have been noted in the rejection of claim 26 above. In addition, Pothapragada/Taoda/Venkatesh disclose: wherein the network protocol stack component provides network interface facilities for both the array controller and the file system processor (73, fig. 5 and corresponding text, Venkatesh).

Response to Arguments

Applicant's arguments filed on December 3, 2003 along with an RCE request have been fully considered but they are not persuasive. The Applicant's arguments of the 12/3/2003 response and Examiners answers are listed below.

Argument: (page 12)

A "file system access operation" as used in the present claims is not just any operation involving data, rather, a "file system access operation" as used in the present claims refers to an operation on or for the file system for a particular file defined in the file system.

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Examiner agrees. The Applicant's disclosure further explains that the "file system access operations" include operations to create, delete, open, close, read or write a file (page 5, lines 5 and 6, disclosure). Patent '459 reads a file in a file system (fig. 13, ST21, '459). Examiner further notes that at the time the invention was made it was notoriously well known to the ordinary skilled in the computer art that all file systems dealing with storage and file transfer handled file operations or "file system access operations."

Argument: (pages 14 and 15)

The step of diverting or turning the course of the file system operation from the file system processes to the array controller processes is simply not disclosed in any reference of record in the present application or any combination proposed by the Examiner.

Examiner disagrees. Claim 1, step (c) states, "diverting the divertible operation from file system processes associated with the data storage device to the array controller processes." Patent '682 clearly discloses analyzing files in a file system (fig. 1, 302, '682). Second, patent '459 discloses a file system (fig. 1) wherein files and file operations are diverted based on readout file size (fig. 13, ST22, '459) to array controller processes (fig. 1, *disk controllers 6-10, group 1 and group 2*, '459).

Argument: (page 16)

The 682 patent does not teach or suggest any program code for preventing a file system operation from being performed by the file system processes.

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Examiner disagrees. Patent '682 in view of '459 clearly discloses a program to manage and compare the readout file size (fig. 13, ST22, '459). Patents '682 and '459 do not have any deficiencies when combined together and rejected under *35 USC § 103*.

Argument: (page 17)

Venkatesh does not make up for the deficiencies of the 682 and 459 patents.

Examiner disagrees. In view of the '682 and '459 patents the conversion from a byte offset operation to a block access operation is inherent by having combined the '682 and '459 patents respectively, further Venkatesh teaches it was a common programming practice to convert operations at the time the invention was made (see 4/16/2003 office action). Further as explained above, the '682 and '459 patents do not have any deficiencies when combined together and rejected under *35 USC § 103*.

With respect to all the pending claims 1-29, the Examiner respectfully traverses Applicant's assertion based on the discussion cited above, as such, Examiner maintains the same rejections.

Conclusion

To expedite the process of examination Examiner requests that all future correspondences in regard to overcoming prior art rejections or other issues (e.g. 35 U.S.C. 112, objections and the like) set forth by the Examiner that Applicants provide and link to the most specific page and line numbers of the disclosure where the best support is found (see 35 U.S.C. 132).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc R Filipczyk whose telephone number is 703-305-7156.


The examiner can normally be reached on Mon-Fri, 8am-4:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MF
February 24, 2004


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